

REMARKS

Claims 1, 3-16 and 18-22 are pending in this application. By this Amendment, claims 1 and 9 are amended, and claim 22 is added. Support for the amendments to the claims and the new claim may be found, for example, in the specification at paragraph [0047] and in the original claims. No new matter is added.

In view of the foregoing amendments and the following remarks, reconsideration and allowance are respectfully requested.

I. Personal Interview

The courtesies extended to Applicants' representative by Examiners Admasu and Pyon at the interview held July 13, 2010, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicants' record of the interview.

II. Rejection Under 35 U.S.C. §102/103

The Office Action rejects claims 1, 3-16 and 18-21 under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as having been obvious over U.S. Patent No. 5,688,876 to Ando et al. ("Ando"). Applicants respectfully traverse the rejection.

Claims 1 and 9 requires a Mannich base prepared by reacting a phenolic compound with a formaldehyde in the presence of a tertiary amine and reacting a resulting product with at least one polyamine to obtain the Mannich base, the Mannich base having primary amino groups. Ando does not disclose such features for at least the following reasons.

As discussed during the personal interview, Ando does not teach a Mannich base having primary amino groups because the Mannich base in Ando is not prepared by reacting a phenolic compound, the phenolic compound having been reacted with a formaldehyde, with at least one polyamine (having at least two primary amino groups). Instead, Ando merely

teaches a Mannich base prepared from a phenolic compound, a carbonyl compound, and an amino compound, such as dimethylaminopropylamine, which do not have primary amino groups. See col. 13, lines 7-13. Thus, Ando does not teach a Mannich base having primary amino groups.

During the personal interview, the Examiner asserted that Ando teaches an active amino compound (IV), which are polyamines, that may be mixed with the Mannich base as a curing agent for the epoxy resin. See col. 13, lines 43-47. The Examiner further asserted that the Mannich base reacts with the amino compound (IV) during this step to further develop the Mannich base to have primary amino groups. The Examiner however indicated that he would consider additional evidence demonstrating that Ando's Mannich base does not have primary amino groups.

Accordingly, Applicants herewith provide conclusive evidence establishing that Ando's Mannich base cannot react with the amino compound (IV) when the amino compound (IV) is added as a curing agent and, thus, does not have primary amino groups. See Mr. Gerber's Rule 132 Declaration (attached). Specifically, the Declaration establishes that (1) the claimed Mannich base comprises at least one primary amino group (see Declaration at paragraphs 7-8; see also Illustrative Figs. 2 and 3 attached); (2) a polyamine is not used in the reaction to produce the Mannich base of Ando (see Declaration at paragraph 9; see also Illustrative Fig. 1 attached); and (3) the Mannich base of Ando does not react with the active amino compound (IV) added to the mixture as a curing agent (see Declaration at paragraph 10-12; see also Illustrative Fig. 1 attached).

Furthermore, the specification discusses practicing the step of reacting a resulting product with the at least one polyamine occurs at a temperature of approximately 80°C, a temperature at which hydroxymethyl groups are available for reaction. See paragraphs [0031]

and [0057]. The reaction temperature is increased to 110°C only after the reaction between the resulting product and the polyamine occurs. Id.

In contrast, Ando teaches that the reaction to produce the Mannich base initially occurs at a temperature of 30 to 50°C, but afterwards the reaction mixture is heated to 100 to 150°C for 5 hours to finalize the reaction. See col. 15, lines 10-33. When a phenolic compound is heated to around 120°C, the hydroxymethyl groups react away and the reactive sites on the phenolic compound disappear. See

http://en.wikipedia.org/wiki/phenol_formaldehyde_resin (describing that "being thermosets, hydroxymethyl phenols will crosslink on heating to around 120°C to form methylene and methyl ether bridges"). Once the reaction is finalized, the active amino compound (IV) is optionally mixed with the resulting Mannich base. See col. 14, lines 43-52. Thus, when the active amino compound (IV) is mixed with the Mannich base, the active amino compound (IV) cannot react with the Mannich base because the Mannich base does not have reactive sites available, as described above.

Therefore, Ando does not teach a Mannich base having primary amino groups.

For at least these reasons, Ando does not anticipate and would not have rendered obvious claims 1 and 9. Claims 3-8, 10-16, and 18-21 variously depend from claims 1 or 9 and, thus, also are not anticipated and would not have been rendered obvious by Ando for at least the same reasons. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

III. New Claim

By this Amendment, new claim 22 is presented. New claim 22 depends from claim 1 and, thus, distinguishes over the applied references for at least the reasons discussed above with respect to claim 1. Furthermore, as discussed during the July 16 telephone conference with Examiner Admasu, Examiner Admasu indicated that Ando does not disclose 3,5-xylenol

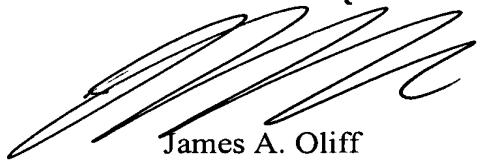
as a phenolic compound. Prompt examination and allowance of new claim 22 are respectfully requested.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Rule 132 Declaration
Illustrative Figures 1-3
Petition for Extension of Time
Request for Continued Examination
Wikipedia Entry

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